west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone (304) 926-0475 • FAX: (304) 926-0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-0280C
Plant ID No.:	107-00004
Applicant:	Camden Materials, LLC
Facility Name:	Parkersburg Facility
Location:	Parkersburg, Wood County
NAICS Code:	324121
Application Type:	Modification
Received Date:	November 17, 2014
Engineer Assigned:	Thornton E. Martin Jr.
Fee Amount:	$2,000.00
Date Received:	November 19, 2014
Complete Date:	December 22, 2014
Applicant Ad Date:	November 18, 2014
Newspaper:	*The Parkersburg News and Sentinel*
UTM's:	Easting: 454.191 km Northing: 4344.743 km Zone: 17
Description:	Applicant proposes to add a portable fractionated reclaimed asphalt pavement (FRAP) processing system. In addition, the existing portable reclaimed asphalt pavement (RAP) system (B11, SCR4, CR2, C20, C21, C22, C23, C24 and ENG1) will be removed.

PROCESS DESCRIPTION

Aggregates (limestone, sand and slag) are barged to the site and stored in open stockpile OS1/N. Barges are unloaded by the existing mobile clam shell and transferred to hopper H1/PE (TP1/MD). H1/PE transfers to belt conveyor C1/N (TP2/N) to diverter D1 (TP3/N). D1 directs materials to C2/N (TP4/N to RS1/N (TP5/N) to OS1/N (TP6/N or to C3/N (TP7/N) to RS2/N (TP8/N) to OS1/N (TP9/N) or to RS3/N (TP10/N) to OS1/N (TP11/N). OS1/N will consist of various piles of limestone, sand and slag which consolidate the existing SP1-SP8. Tanks T2 through T4 are heated with a natural gas fired heater AH1/N [2E]. No. 2 fuel oil/used oil is trucked to the site and stored in T1. Off-road diesel is trucked to the site and stored in tank T5. Natural gas is piped to the facility.

Aggregates from stockpile OS1/N are transferred by a front endloader to cold feed bins B1/PE through B7/PE (TP12/MDH). The aggregates from B1/PE drop to belt conveyor C4/N; B2/PE to C5/N; B3/PE to C6/N; B4/PE to C7/N; B5/PE to C8/N; B6/PE to C9/N; and B7/PE to C10/N (TP13/PE). C4/N through C10/N transfer to C11/N (TP14/N) to screen SCR1/PW (TP15/N). Oversize from SCR1/PW goes to ground (TP17/N); pass through transfers to belt conveyor C12/N (TP16/PE) which conveys the aggregates to the dryer/drum mixer CFDM1/CYC1 and BH1 [1E] (TP18/PE).

RAP from stockpile OS2/N is transferred by front endloader to RAP bin B8/PE and B9/PE (TP19/MDH). B8/PE and B9/PE drop material onto belt conveyor C13/N (TP20/PE) to screen SCR2/PW

(TP21/N). Oversized material transfers to ground (TP23/N). Pass through material transfers (TP22/PE) to belt conveyor C14/N to CDFM1/CYC1 and BH1 [1E] (TP24/PE).

Additionally, RAP from stockpile OS2/N is transferred by front endloader to RAP bin B10/PE (TP25/MDH). B10/PE drops material onto belt conveyor C15/N (TP26/PE) to C16/N (TP27/N) to screen SCR3/PW (TP28/N). Oversized material transfers to belt C18/N and is transported to the RAP crusher CR1/FE (TP32/N). Material leaving the crusher transfers to belt conveyor C19/N (TP33/PE) and back to C16/N (TP34/N) to SCR3/PW. Pass through RAP from SCR3/PW transfers to CFMD1/CYC1 and BH1 [1E] (TP30/PE).

Proposed Modification

Camden Materials, LLC (Camden) will be using an ASTEC ProSizer 3100 (a portable FRAP processing system), to process RAP at the site into a high-quality, well-graded aggregate coated with asphaltic cement. The ASTEC ProSizer 3100 is equipped with a 200 tph double-deck screen and a 75 tph horizontal shaft impactor. The unit is powered by a John Deere 6068H 173 hp engine (F-ENG1/N [F-1E]). A portable radial stacker will be used with the system and will be powered by the same engine. The unit will be utilized for a short time before is is moved to another site and will return to the site as needed. The existing RAP system will remain at the site. FRAP will be fed into the asphalt plant via the existing RAP feed system and the RAP throughput of the asphalt plant will not be increased. This modification does not include an increase in the maximum storage capacity of the raw and sized RAP stockpile (OS2/N).

RAP from existing RAP stockpile (OS2/N) is loaded into the feed hopper F-H1/PE by an endloader [F-TP1/MD]. The feed bins feeds belt conveyor F-BC1/PE [F-TP2/FE], which transports the RAP to the double-deck screen F-S1/FE [F-TP3/PE]. Oversized material is fed to belt conveyor F-BC2/N [F-TP4/FE], which transports the material to the horizontal shaft impactor F-CR1/FE [F-TP5/FE]. The material drops from the crusher onto belt conveyor F-BC1/PE [F-TP7/FE], which transports it back to the screen. The crusher can also be arranged so that oversized material from the screen bypasses the crusher and returns to the existing raw RAP stockpile OS2/N [F-TP6/N].

Sized FRAP stockpiles OS2A/N and OS2B/N will be part of the existing RAP stockpile OS2/N. The throughput of RAP will not be changed with this application, nor will additional storage be created. RAP will either be sized to a single size using the existing RAP equipment and there will be a single large RAP stockpile OS2/N, or RAP will be sized to two different sizes with the portable FRAP equipment ant there will be two smaller sized FRAP stockpiles OS2A/N and OS2B/N but, the capacity and base area of the RAP/FRAP stockpiles will remain unchanged.

The smaller fractions from the screen are discharged to belt conveyor F-BC3/N [F-TP8/PE] and F-BC4/N [F-TP10/PE]. F-BC3/N and F-BC4/N can transfer material directly to the sized RAP stockpiles OS4A/N [F-TP9/MD] and OS4B/N [F-TP11/MD] or to radial stacker F-RS1/N [F-TP9/MD or F-TP11/MD]. The radial stacker is only fed by one of the belt conveyors F-BC3/N or F-BC4/N at any given time; not both at the same time. Material from F-RS1/N is transferred to OS2A/N or OS2B/N [F-TP12/MD]. From stockpiles OS2A/N and OS2B/N, material are transferred via endloader to the existing stationary RAP hoppers B-8/PE, B-9/PE [TP-19/MD] and B-10/PE [TP-25/MD].

When FRAP is transferred to the existing RAP system, the flop gate on the screen is opened so the fractionated RAP passes through the screen and is not double-processed.

Emissions from CFDM1 are vented to the cyclone CYC1, where large particles are removed from the air stream. The CYC1 is vented to a baghouse BH1 [1E]. Particulate matter collected in the hoppers at the bottom of CYC1 and BH1 is removed via a screw conveyor SC1/FE (TP51/FE) that returns the material to the dryer/drum mixer CFDM1/CYC1 and BH1 (TP52/FE) where it becomes part of the product.

From the dryer/drum mixer CFDM1/CYC1 and BH1, hot mix asphalt (HMA) is transferred to a slat conveyor SLC1/FE (TP35/PE), which conveys the material to HMA storage silos BS1/FE through BS3/FE (TP36/PE). The HMA is loaded into trucks via stationary chutes at the base of silos BS1/FE through BS3/FE (TP37/PE).

Note on RAP system emissions : RAP will be crushed one (1) time. Worst case emissions are calculated by sending RAP through the portable system then to B8/B9 to CFDM1.

See the following tables for description, maximum throughput, control equipment, and maximum storage for all permitted equipment at the Parkersburg facility:

Table 1: Equipment Summary (R13-0280C)

Equipment ID No.	Description	Date of Change	AMR[1]	Maximum Capacity		Control Equip-ment[1]
				TPH	TPY	
Equipment						
CFDM1	Counterflow Drum Mix Plant	2013	M	350	500,000	CYC1, BH1
SCR1	Screen	2013	M	350	500,000	PW
SCR2	Screen	2013	M	100	125,000	PW
SCR3	Screen	2013	M	100	187,500	PW
SCR4	Screen	2015	R	100		PW
CR1	Crusher	2013	M	100	62,500	FE
CR2	Crusher	2015	R	100		FE
AH1	Asphalt Heater –	2003	M	1,350 scf/h		N
Engine						
ENG1	Caterpillar 3306 Diesel Engine (Mfg. 1983)	2015	R	25gal/hr	550 hp	N
FRAP System						
F-H1	FRAP Feed Hopper	2015	A	200	125,000	PE
F-BC1	FRAP Belt Conveyor	2015	A	200	125,000	PE
F-S1	FRAP Screen	2015	A	200	125,000	FE
F-BC2	FRAP Belt Conveyor	2015	A	75	46,875	N
F-CR1	FRAP Crusher	2015	A	75	46,875	FE
F-BC3	FRAP Belt Conveyor	2015	A	200	125,000	N
F-BC4	FRAP Belt Conveyor	2015	A	200	125,000	N
F-RS1	FRAP Radial Stacker	2015	A	200	125,000	N
F-ENG1	FRAP Engine (John Deere 6068HFC93A-mfg. date 5/17/2013, EPA Interim Tier 4)	2015	A	9.28 gal/hr	173 hp	N
Conveyors						
C1	Belt Conveyor	2013	M	350	500,000	N
C2	Belt Conveyor	2013	M	350	500,000	N
C3	Belt Conveyor	2013	M	350	500,000	N
C4	Belt Conveyor	2003	M	350	500,000	N
C5	Belt Conveyor	2003	M	350	500,000	N
C6	Belt Conveyor	2003	M	350	500,000	N
C7	Belt Conveyor	2003	M	350	500,000	N
C8	Belt Conveyor	2003	M	350	500,000	N
C9	Belt Conveyor	2013	M	350	500,000	N
C10	Belt Conveyor	2013	M	350	500,000	N
C11	Belt Conveyor	2013	M	350	500,000	N

Equipment ID No.	Description	Date of Change	A M R[1]	Maximum Capacity		Control Equip-ment[1]
				TPH	TPY	
C12	Belt Conveyor	2013	M	350	500,000	N
C13	Belt Conveyor	2013	M	100	125,000	N
C14	Belt Conveyor	2013	M	100	125,000	N
C15	Belt Conveyor	2013	M	100	125,000	N
C16	Belt Conveyor	2013	M	100	187,500	N
C17	Belt Conveyor	2013	M	100	125,000	N
C18	Belt Conveyor	2013	M	100	62,500	N
C19	Belt Conveyor	2013	M	100	62,500	N
C20	Belt Conveyor	2015	R	100	187,500	N
C21	Belt Conveyor	2015	R	100	62,500	N
C22	Belt Conveyor	2015	R	100	62,500	N
C23	Belt Conveyor	2015	R	100	125,000	N
C24	Belt Conveyor	2015	R	100	125,000	N
SLC1	Slat Conveyor	2003	M	350	500,000	FE
SC1	Screw Conveyor	2013	M	10	12,500	FE
RS1	Radial Stacker	2013	M	350	500,000	N
RS2	Radial Stacker	2013	M	350	500,000	N
RS3	Radial Stacker	2013	M	350	500,000	N
Storage						
OS1	Aggregate/Limestone/Slag Stockpile	2013	M	80,000 tons	500,000	N
OS2	RAP Stockpile	2013	M	50,000 tons	125,000	N
T1	Storage Tank – #2 fuel/used oil	2013	M	25,000	1,000,000	N
T2	Storage Tank – Asphalt Cement	2003	M	30,000	7,000,000	N
T3	Storage Tank – Asphalt Cement	2013	M	30,000		N
T4	Storage Tank – Asphalt Cement	2013	M	30,000		N
T5	Storage Silo – Off Road Diesel	2003	M	24,500	50,000	N
H1	Hopper	2013	M	350	500,000	PE
B1	Aggregate Bin	2003	M	20 tons	500,000	PE
B2	Aggregate Bin	2003	M	20 tons		PE
B3	Aggregate Bin	2003	M	20 tons		PE
B4	Aggregate Bin	2003	M	20 tons		PE
B5	Aggregate Bin	2003	M	20 tons		PE
B6	Aggregate Bin	2013	M	20 tons		PE
B7	Aggregate Bin	2013	M	20 tons		PE
B8	RAP Bin	2013	M	20 tons	125,000	PE
B9	RAP Bin	2013	M	20 tons	125,000	PE
B10	RAP Bin	2013	M	20 tons	125,000	PE
B11	RAP Bin	2015	R	20 tons	125,000	PE
BS1	HMA Silo	2003	M	200 tons	500,000	FE
BS2	HMA Silo	2013	M	200 tons		FE
BS3	HMA Silo	2013	M	200 tons		FE
D1	Diverter	2013	M	350	500,000	N

[1] A - Addition; M - Modification; R - Removal (Existing unmodified equipment to be included in the permit is labeled with an M.)

[2] FE - Full Enclosure; PE - Partial Enclosure; PW - Partial Enclosure w/water spray; CYC1 - Inertial Separator; BH1 - Baghouse; N - None.

SITE INSPECTION

Douglas Hammel of the Compliance and Enforcement section performed targeted, un-announced partial on-site inspections throughout the month of September and October of 2012 due to complaints of odors originating at the plant. The facility receive a score of 30 - In Compliance or a score of 41 - Not Operating. The facility has a long history of inspections and is generally found to be in compliance. Based on the size and scope of the modification proposed, the writer deemed that a site visit was not necessary at this time.

Directions given in application: From Charleston, take I-77 North to exit 173. Turn left onto State Route 95 West, go 0.3 miles to the first light. Turn right onto Edgelawn then immediately left onto Camden Avenue. Go 1.4 miles, turn right onto Hickory Street and go to the end of the street to the facility.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

The Parkersburg facility will operate at a maximum production rate of 350 tons per hour and 500,000 tons per year of asphalt. Emissions were calculated by Potesta & Associates, Inc. on behalf of Camden Materials, LLC. Please see the following descriptions and tables for calculation explanations:

Crushing and Screening

AP-42 Section 13.2.4-4 (Miscellaneous Sources: Controls) and the WVDAQ G40-C Emissions Worksheet were utilized to calculate the crushing and screening emissions. Crusher CR1 will be fully enclosed, and water sprays will be used on partially enclosed screens SCR1, SCR2 and SCR3.

Table 2a: Crushing/Screening

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
CR1 (RAP)	Total Particulate Matter	0.04	0.02
	PM_{10}	0.02	0.01
F-CR1	Total Particulate Matter	0.03	0.01
	PM_{10}	0.02	0.01
SCR1 (Aggregate)	Total Particulate Matter	1.75	1.25
	PM_{10}	0.61	0.44
SCR2 (RAP)	Total Particulate Matter	0.50	0.31
	PM_{10}	0.17	0.11
SCR3 (RAP)	Total Particulate Matter	0	0
	PM_{10}	0	0
F-S1	Total Particulate Matter	1.0	0.31
	PM_{10}	0.35	0.11
Total Crushing/Screening	Total Particulate Matter	3.32	1.91
	PM_{10}	1.17	0.69

FRAP processing is capable of 200 tons per hour (tph) and will be limited to 125,000 tons per year (tpy).

Materials Handling

AP-42 Section 13.2.4 (Miscellaneous Sources: Aggregate Handling and Storage Piles) was used to obtain emission factors for facility transfer points.

Table 2b: Materials Handling including FRAP

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
Transfer Points	Total Particulate Matter	13.83	8.70
	PM_{10}	6.49	4.00

Silo Filling and Plant Loadout

Silo filling and plant loadout emissions were calculated using emission factors from AP-42 Table 11.1-14. (Hot Mix Asphalt Plants: Predictive Emission Factor Equations for Load-Out and Silo Filling Operations) and Table 11.1-16 (Hot Mix Asphalt Plants: Speciation Profiles for Load-Out, Silo Filling, and Asphalt Storage Emissions - Organic Volatile-Based Compounds).

Table 2c: Silo Filling and Plant Loadout

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
Silo Filling	Total Particulate Matter	0.21	0.15
	PM_{10}	0.05	0.04
	VOC	8.53	6.09
	CO	0.83	0.59
	Total HAPs*	0.111	0.079
Plant Loadout	Total Particulate Matter	0.09	0.07
	PM_{10}	0.02	0.02
	VOC	1.37	0.98
	CO	0.47	0.34
	Total HAPs*	0.022	0.016

* HAPs for Silo Filling include Benzene, Ethylbenzene, Toluene, Xylene, and Formaldehyde

Haulroads

Emission factors for haulroads were taken from AP-42 Section 13.2 (Miscellaneous Sources: Paved Roads and Unpaved Roads). Site haulroads will consist of both paved and unpaved roads. Paved roads will be 0.25 miles and unpaved roads will be 0.125 miles. Trucks utilizing both the paved and unpaved roads will be product trucks, aggregate/RAP trucks, asphaltic cement trucks, No. 2 fuel oil trucks and used oil trucks at a maximum rate of 49 trips total per hour and 70,255 trips per year. Endloaders will travel on the unpaved portion at a maximum rate of 59 trips per hour and 83,334 trips per year. Fixed water sprays will be utilized at the facility to minimize fugitive emissions from haulroads.

Table 2d: Fugitive Emissions – Haulroads

Fugitive Emissions Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
Paved Haulroads	Total Particulate Matter	7.43	5.32
	PM_{10}	1.47	1.05
Unpaved Haulroads	Total Particulate Matter	22.88	16.78
	PM_{10}	6.74	4.95
Total Haulroads	*Total Particulate Matter*	*30.31*	*22.10*
	PM_{10}	*8.21*	*6.00*

Asphalt Counterflow Drum Mixer

The ASTEC Double Barrel counterflow drum mixer (CFDM1) utilizes a Hauck 580 dryer. The dryer may use a maximum of 160,185 scf/hr of natural gas, 1,490 gal/hr of #2 fuel oil, or 1,556 gal/hr of used oil. The maximum sulfur content of the #2 fuel oil and used oil is 0.5%. Emission factors were taken from AP-42 Table 11.1-10. The highest emission factors and HAP values between natural gas, #2 fuel oil, and used oil were used. An ASTEC Inertial Separator and an ASTEC RBH 64-15 Pulse jet baghouse (BH1) will be utilized to control particulate emissions from CFDM1. The particulates will pass from the dryer through the ductwork and into the separator, where larger particles are knocked out of the air stream to the bottom of the baghouse. The remaining fines are captured by the bags and released by reversed jet air to the bottom of the baghouse. The fines and large particles are returned to the mixing chamber through an auger system and become part of the final hot mix asphalt product.

Table 2e: Asphalt Counterflow Drum Mixer

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
CFDM1 (Emission Point 1E)	Carbon Monoxide	45.50	32.50
	Nitrogen Oxides	19.25	13.75
	Sulfur Dioxide	20.30	14.50
	Total Particulate Matter	21.91	15.65
	PM_{10}	5.04	3.60
	Volatile Organic Compounds	11.20	8.00
	HCl	0.07	0.05
	Acetaldehyde	0.46	0.33
	Benzene	0.14	0.10
	Ethylbenzene	0.08	0.06
	Formaldehyde	1.09	0.78
	Toluene	1.02	0.73
	Xylene	0.07	0.05
	PAH HAPs total	0.31	0.22
	Metal HAPs total	0.0434	0.0312
	TOTAL HAPs	3.68	2.63

Asphalt Heater

The Parkersburg facility will utilize one (1) asphalt heater. A natural gas fired heater (AH1) will be used to heat the asphalt in tank T1 and T2. The heater uses a maximum of 1,350 scf per hour of natural gas. Annual emissions were calculated assuming the heater would always run (8,760 hours per year). Emission factors for the calculations were taken from General Permit G20-B Application Instructions.

Table 2f: Asphalt Heater

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
AH1 (Emission Point 2E)	Carbon Monoxide	0.113	0.50
	Nitrogen Oxides	0.135	0.59
	Sulfur Dioxide	0.001	0.01
	Total Particulate Matter	0.01	0.04
	PM_{10}	0.01	0.04
	Volatile Organic Compounds	0.007	0.03

Tanks

Tanks T1 and T2 will be utilized to store asphaltic cement. Tank T4 (3,000 gal) will store Off-road diesel. Tank T3 (20,000 gal) will be used to store No. 2 fuel oil or used oil for use by the dryer in the counterflow drum mixer.

Portable Fractionated Reclaimed Asphalt Pavement (FRAP) Processing Unit

The Prosizer 3100 is a portable plant that processes milled RAP. It consists of a horizontal shaft impactor, a double deck screen, four (4) belt conveyors, a radial stacker, a feed hopper/bin, and an engine for electrical and hydraulic power. The plant is capable of 200 tons per hour (tph) and will be limited to 125,000 tons per year (tpy).

Table 3: Engine Emissions (Prosizer 3100)

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
F-ENG1 (Emission Point F-1E)	Carbon Monoxide	1.22	0.24
	Nitrogen Oxides	5.65	1.13
	Sulfur Dioxide	0.37	0.07
	Total Particulate Matter	0.40	0.08
	PM_{10}	0.40	0.08
	Volatile Organic Compounds	0.46	0.09
	Formaldehyde	0.0015	0.0003
	TOTAL HAPs	0.0049	0.001

*Emission factors from AP-42 Table 3.3-1(Criteria Pollutants) and Table 3.3-2 (HAPS).

SUMMARY OF EMISSIONS (Table 4):

Table 4: Proposed facility emissions (R13-0280C)

Emission Type	*Maximum Hourly Emissions (lb/hr)*	*Maximum Annual Emissions (tons/yr)*	*Change in Emissions (tons/yr)**
Total Particulate Matter	*70.41*	*52.83*	*-4.53*
Fugitive (Haulroads & Stockpiles)	*30.64*	*26.18*	*0.00*
PM_{10}	*21.83*	*16.46*	*-4.43*
Fugitive (Haulroads & Stockpiles)	*8.65*	*7.94*	*0.00*
VOC	*21.57*	*15.24*	*0.14*
SO_2	*20.67*	*14.63*	*0.12*
NOx	*25.04*	*16.11*	*1.77*
CO	*48.13*	*34.31*	*0.38*
HCl	*0.070*	*0.05*	*0.00*
Acetaldehyde	*0.461*	*0.33*	*0.00*
Benzene	*0.144*	*0.10*	*0.00*
Ethylbenzene	*0.087*	*0.07*	*0.00*
Toluene	*1.029*	*0.74*	*0.00*
Xylene	*0.099*	*0.08*	*0.00*
Formaldehyde	*1.15*	*0.84*	*0.00*
Total HAPs	*3.82*	*2.73*	*0.00*

* The increase in emissions for VOC, SO2, Nox, CO and HAP's is not due to the addition of the FRAP system. The previous application and subsequent permit did not include emissions from the Caterpillar 3306 Gen Set (ENG1) in the proposed PTE.

REGULATORY APPLICABILITY

NESHAPS and PSD have no applicability to the proposed facility. The proposed modification of a hot mix asphalt plant is subject to the following state and federal rules:

45CSR2 To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers

The purpose of this rule is to establish limitations for smoke and particulate matter which are discharged from fuel burning units. Per this rule, Section 2.14 defines an indirect heat exchanger as a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. Section 2.10 defines a fuel burning unit as any furnace, boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer. The facility is exempt from sections 4, 5, 6, 8, and 9 because the asphalt heater (1.43 MMBtu/hr) is below 10 MMBtu/hr. The facility will be subject to the opacity requirements in this rule, which is 10% opacity based on a six minute block average.

45CSR3 To Prevent and Control Air Pollution from the Operation of Hot Mix Asphalt Plants

The purpose of this rule is to establish emission limitations for hot mix asphalt plants and the plant property. The facility is subject to this rule because it meets the definition of Hot Mix Asphalt Plant as found in Section 2.14. The facility must meet visible emission limits of 40% opacity during start-up or shutdown and 20% opacity during operations of any fuel burning equipment. The facility shall be

operated and maintained in a manner as to prevent emission of particulate matter from any point other than a stack outlet. The facility will utilize water sprays, partial enclosures, full enclosures, and baghouses to minimize particulate emissions.

45CSR7 To Prevent and Control Particulate Matter Air Pollution from Manufacturing Processes and Associate Operations

The purpose of this rule is to prevent and control particulate matter air pollution from manufacturing processes and associated operations. The facility is subject to the requirements of this rule because it meets the definition of "Manufacturing Process" found in Section 2.20 of this rule.; Subsection 3.7 – no visible emissions from any storage structure pursuant to subsection 5.1 which is required to have an enclosure; Subsection 4.1 – PM emissions shall not exceed those under Table 45-7A (see paragraph below); Subsection 5.1 – manufacturing process and storage structures must be equipped with a system to minimize emissions (CYC1 and BH1 control emissions from the plant CFDM1); Subsection 5.2 – minimize PM emissions from haulroads and plant premises (water sprays will be utilized to control these emissions).

According to Table 45-7A, for a type 'a' source with a maximum process weight rate of 500,000 lb/hr, the maximum allowable emission rate is approximately 47 lb/hr of particulate matter. The proposed maximum point source emission rate at the facility is 39.77 lb/hr of particulate matter according to calculated emissions in permit application R12-0280C.

45CSR10 To Prevent and Control Air Pollution from Emissions of Sulfur Oxides

The purpose of this rule is to prevent and control air pollution from the emission of sulfur oxides. Per this rule, Section 2.9 defines an indirect heat exchanger as a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. Section 2.8 defines a fuel burning unit as any furnace, boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer. This facility is exempt from sections 3 and 6 because the liquid asphalt heater (1.43 MMBtu/hr) is below 10 MMBtu/hr. According to section 4.1., sulfur dioxide concentrations must fall below 2,000 parts per million by volume.

45CSR13 Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation

The proposed modification is subject to the requirements of 45CSR13 because it will result in the potential to discharge less than six (6) pounds per hour and ten (10) tons per year of a regulated air pollutant (PM and PM_{10}), however, will involve the construction of equipment subject to NSPS Supbarts I, OOO and IIII. The facility is subject to the following sections of this rule: reporting requirements, requirements for modifications of stationary sources, demonstrating compliance with stationary sources, public review procedures, and permit application fees. The facility will demonstrate compliance by following all the applicable rules and regulations that apply to the facility. They will also follow the terms and conditions set forth in permit R12-0280C. The permittee published a Class I legal advertisement in The Parkersburg News and Sentinel on November 18, 2014 and submitted an application fee of $1,000.00 and the $1,000.00 NSPS fees.

45CSR16 Standards of Performance for New Stationary Sources

This rule establishes and adopts standards of performance for new stationary sources promulgated by the United States Environmental Protection Agency pursuant to section 111(b) of the federal Clean Air Act, as amended (CAA). The facility is subject to 40CFR60 Subparts I, OOO and IIII.

45CSR30 Requirements for Operating Permits

The facility's potential to emit will be 10.46 tpy of a regulated air pollutant (PM_{10}), not including fugitive emissions from haulroads, which is less than the 45CSR30 threshold of 100 tpy for a major

source. However, the facility is subject to 40 CFR 60 Subpart I , OOO and IIII. Therefore, the facility is still subject to 45CSR30 and classified as a Title V deferred non-major source.

40CFR60 Subpart I: Standards of Performance for Hot Mix Asphalt Facilities

The facility is subject to this Subpart because it meets the definition of "hot mix asphalt facility" as defined in 60.91(a) – hot mix asphalt facility means any facility used to manufacture hot mix asphalt by heating and drying aggregate and mixing with asphalt cements and consisting of any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler, systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems.

40CFR60 Subpart OOO: Standards of Performance for Nonmetallic Minerals Processing Plant

In addition to nonmetallic minerals processing plants, provisions of this subpart also apply to crushers and grinding mills at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement and subsequent affected facilities up to, but not including, the first storage silo or bin are subject to the provisions of this subpart. The facility shall be in compliance with 60.672 (b) no greater than 7% opacity from any transfer point on belt conveyors or from any other affected facility (as defined in 60.670 and 60.671) and no greater than 12% opacity from any crusher when the particulate matter control methods and devices (all control methods shown in equipment table) proposed within application R12-0280C are in operation.

45CFR60 Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Camden Materials, LLC is subject to this subpart because the engine was manufactured after April 1, 2006. The engine emissions for F-ENG1 is EPA Interim Tier IV Certified, Certificate Number: DJDXL06.8210-019.

40CFR63 Subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Camden Materials, LLC is subject to 40CFR63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because F-ENG1 is considered a new area source of HAPs since it will be constructed on or after June 12, 2006, however, the only requirements that apply are those required under 45CFR60 Subpart IIII.

The proposed modification of Camden Materials, LLCs' existing hot mix asphalt plant is <u>not</u> subject to the following state and federal rules:

45CSR14 Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration

The facility will have the potential to emit 30.73 TPY of a regulated air pollutant (PM), not including fugitive emissions from haulroads, which is less than the 45CSR14 threshold of 250 TPY. This facility is not listed in Table 2, and so fugitive emissions are not included when determining source applicability. Therefore, the proposed Modification is not subject to the requirements set forth within 45CSR14.

<u>TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS</u>

Acetaldehyde:
Acetaldehyde is mainly used as an intermediate in the synthesis of other chemicals. It is ubiquitous in the environment and may be formed in the body from the breakdown of ethanol. Acute (short-term) exposure to acetaldehyde results in effects including irritation of the eyes, skin, and respiratory tract. Symptoms of chronic (long-term) intoxication of acetaldehyde resemble those of alcoholism. Acetaldehyde is

considered a probable human carcinogen (Group B2) based on inadequate human cancer studies and animal studies that have shown nasal tumors in rats and laryngeal tumors in hamsters.

Benzene:
Benzene is found in the air from emissions from burning coal and oil, gasoline service stations, and motor vehicle exhaust. Acute (short-term) inhalation exposure of humans to benzene may cause drowsiness, dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness. Chronic (long-term) inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells and aplastic anemia, in occupational settings. Reproductive effects have been reported for women exposed by inhalation to high levels, and adverse effects on the developing fetus have been observed in animal tests. Increased incidence of leukemia (cancer of the tissues that form white blood cells) have been observed in humans occupationally exposed to benzene. EPA has classified benzene as a Group A, human carcinogen.

Ethyl Benzene:
Ethyl benzene is mainly used in the manufacturing of styrene. Acute (short-term) exposure to ethyl benzene in humans results in respiratory effects, such as throat irritation and chest constriction, irritation of the eyes, and neurological effects, such as dizziness. Chronic (long-term) exposure to ethyl benzene by inhalation in humans has shown conflicting results regarding its effects on the blood. Animal studies have reported effects on the blood, liver, and kidneys from chronic inhalation exposure to ethyl benzene. Limited information is available on the carcinogenic effects of ethyl benzene in humans. In a study by the National Toxicology Program (NTP), exposure to ethyl benzene by inhalation resulted in an increased incidence of kidney and testicular tumors in rats, and lung and liver tumors in mice. EPA has classified ethyl benzene as a Group D, not classifiable as to human carcinogenicity.

Formaldehyde:
Formaldehyde is used mainly to produce resins used in particle board products and as an intermediate in the synthesis of other chemicals. Exposure to formaldehyde may occur by breathing contaminated indoor air, tobacco smoke, or ambient urban air. Acute (short-term) and chronic (long-term) inhalation exposure to formaldehyde in humans can result in respiratory symptoms, and eye, nose, and throat irritation. Limited human studies have reported an association between formaldehyde exposure and lung and nasopharyngeal cancer. Animal inhalation studies have reported an increased incidence of nasal squamous cell cancer. EPA considers formaldehyde a probable human carcinogen (Group B1).

Toluene:
The acute toxicity of toluene is low. Toluene may cause eye, skin, and respiratory tract irritation. Short-term exposure to high concentrations of toluene (e.g., 600 ppm) may produce fatigue, dizziness, headaches, loss of coordination, nausea, and stupor; 10,000 ppm may cause death from respiratory failure. Ingestion of toluene may cause nausea and vomiting and central nervous system depression. `Contact of liquid toluene with the eyes causes temporary irritation. Toluene is a skin irritant and may cause redness and pain when trapped beneath clothing or shoes; prolonged or repeated contact with toluene may result in dry and cracked skin. Because of its odor and irritant effects, toluene is regarded as having good warning properties. The chronic effects of exposure to toluene are much less severe than those of benzene. No carcinogenic effects were reported in animal studies. Equivocal results were obtained in studies to determine developmental effects in animals. Toluene was not observed to be mutagenic in standard studies.

Xylene:
Commercial or mixed xylene usually contains about 40-65% m-xylene and up to 20% each of o-xylene and p-xylene and ethyl benzene. Xylenes are released into the atmosphere as fugitive emissions from industrial sources, from auto exhaust, and through volatilization from their use as solvents. Acute (short-term) inhalation exposure to mixed xylenes in humans results in irritation of the eyes, nose, and throat, gastrointestinal effects, eye irritation, and neurological effects. Chronic (long-term) inhalation exposure of humans to mixed xylenes results primarily in central nervous system (CNS) effects, such as headache, dizziness, fatigue, tremors, and incoordination; respiratory, cardiovascular, and kidney effects have also been reported. EPA has classified mixed xylenes as a Group D, not classifiable as to human

carcinogenicity.

AIR QUALITY IMPACT ANALYSIS

Air dispersion modeling was not performed due to the size and proposed location of this facility. This facility will be located in Wood County, WV, which has been re-designated as attainment or $PM_{2.5}$ (particulate matter less than 2.5 microns in diameter) as of September 2013.

MONITORING OF OPERATIONS

For the purposes of determining compliance with maximum throughput limits, the applicant shall maintain certified daily and monthly records. An example form is included as Appendix A to Permit R13-0280C. The Certification Of Data Accuracy statement shall be completed within fifteen (15) days of the end of the reporting period. These records shall be maintained on-site for at least five (5) years and be made available to the Director of the Division of Air Quality or his or her duly authorized representative upon request.

RECOMMENDATION TO DIRECTOR

The information contained in the permit application R12-0280C indicates that compliance with all applicable state rules and federal regulations should be achieved when all proposed control methods are in operation. Therefore, the granting of a permit to Camden Materials, LLC for the modification of a hot mix asphalt plant located in Parkersburg, Wood County, West Virginia, is hereby recommended.

Thornton E. Martin Jr.
Permit Writer

December 22, 2014
Date